

# Ophthalmic Subjects in Talmudic Literature.

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PHILADELPHIA.

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## OPHTHALMIC SUBJECTS IN TALMUDIC LITERATURE.\*

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As a collection of the writings of the ancient Hebrews, the Talmud furnishes some very interesting records to the student of medical history. The Talmud is the sum total of the ancient Hebrew literature written in the Arameic, Chaldeic and Hebrew languages. It is the non-systematized encyclopedia of the ancient culture land of Judea, dealing in particular with religious, social and civic questions. In the vast amount of learning gathered in the 36 volumes which comprise the Talmud, we find some very interesting data concerning the medical knowledge of the ancient Hebrews. We find in the Bible, the most reliable of the old records of human endeavor, many valuable hygienic measures as a preventive means against the spread of infection. We can not, however, compare the medicine of the ancient Judeans with those of other nations, so we must clearly differentiate between the medico-historic studies of Greece, for instance, from that of the Hebrew. From the Hebrews we have the Bible and at a later date the Talmud, but these works are primarily law books, being religious and social and refer to medicine only when some subject relative to law requires such information. In considering various laws of sexual purity the Talmudists are of necessity compelled to have recourse to the knowledge of obstetrics and gynecology of the time; so that we have rather an extensive discussion on menstruation as well as many pathologic conditions necessitating surgical interference. Cesarian section and hysterectomy are both mentioned in the Talmud. Hysterectomy,

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in the Talmud, however, refers only to animals; Dr. Tuduth states that "no cow ever leaves Alexandria, in Egypt, unless her uterus has been removed so as to prevent the reproduction of the same species in other countries."<sup>1</sup> The basis of Talmudic medicine may be given as follows: (a) Tradition; (b) medical ideas of Talmudic times; (c) Direct investigation by means of dissection; (d) personal investigation and observation; (e) experimentation and vivisection; (f) "Volksmedizin" or general popular practice.<sup>2</sup>

Some of the Talmudic authors were evidently familiar with all the branches of medicine. Various diseases are discussed in the Talmud that have some bearing on the religious life of the community. For instance, a man having a certain disease or some physical abnormality is, according to biblical law, not qualified to minister to the people in the capacity of a priest.<sup>3</sup> Diseased and deformed animals were to be excluded from the sacrificial altar of the temple. These diseases had to be classified by the doctors of the Talmud and the curable had to be differentiated from the non-curable. In their decision the Talmudists did not rely on tradition alone, but often, and especially in doubtful cases, the medical expert, the "mumcha," was consulted and his decision was final.<sup>4</sup> Some of the Talmudists served for years in the capacity of shepherds in order to be able to observe various diseases of animals so as to intelligently differentiate certain diseases and exclude them from the Temple for sacrificial purposes.<sup>5</sup>

Of postmortem examinations for diagnostic purposes we find a few records, some on man, others on animals. I shall only cite a case of a sheep that dragged its hind legs, and Rabbi Yemar diagnosed the case as "Shigruna" hip-joint disease, while Rabina suspected a dissolution of the spinal cord as the cause of the paralysis; the sheep was killed and the diagnosis of spinal disease was confirmed.<sup>6</sup> In the study of embryology Samuel did considerable experimentation. He examined hundreds of cases in various stages of embryonic life to determine the period when the sex could be differentiated.<sup>7</sup>

Talmudic medicine, however, can be thought of only in its relation to religious rites and from a medicolegal aspect. Medicine, as well as general knowledge, flourished in the ancient land of Judea, and the medical practice was not in the hands of the priest, except

perhaps that part in direct relation to state medicine which had control of those contagious diseases requiring isolation. The medical man was an important factor in the old Jewish state. The Talmud forbade residing in a city in which there was no physician.<sup>8</sup> He was highly honored and universally respected by all. "Honor thy physician ere thou be in need of him," says a Talmudist.<sup>9</sup> As a rule, the art of healing was transmitted from father to son.<sup>10</sup> The physician took part in many of the religious questions necessitating deliberation on some medical point. That the Talmudists were familiar with the medical sciences of the time can be seen from the numerous medical aphorisms preserved in the literature. According to the Talmud, the physician must have received a comparatively large fee for his services. A common saying in the Talmud is, "A physician who takes nothing is worth nothing."<sup>11</sup> It is impossible to give a correct estimate of the knowledge of medicine of the ancient Hebrews, for neither the Bible nor the Talmud contain a medical treatise as such and medical subjects are treated of or alluded to only in so far as they serve to elucidate some point of law involving the science and art of healing.

In this essay I shall limit myself to references of diseases of the eye. The Mishna mentions one hundred and forty different diseases, which in the eyes of the law are considered bodily defects and, therefore, disqualify a man from performing any religious service in the Temple in the capacity of a priest, and among these are some eye diseases which are classified: (a) Eye defects and anomalies that disqualify the priest; (b) eye defects, anomalies and eye diseases that disqualify animals from the sacrificial altar of the Temple. Some eye injuries from a medicolegal standpoint are also considered.

The references of ophthalmic interest that I have been able to collect from the literature of the Talmud are of considerable interest from the historical point of view and give us a clear insight into the crude ophthalmic knowledge of that time. I shall in this paper endeavor to present to readers to whom the remarkable literature of the Talmud is a sealed book some idea on the anatomy, physiology, pathology, therapeutics and hygiene of the eye. Of course, many diseased conditions described in the Talmud are not very clear to us; this is perhaps due to the fact that we do not pos-



sess the proper meaning of some words, which may have undergone some change in the course of time, or perhaps due to the inability of the Talmudists to state the conditions correctly, but we can by a careful consideration of the subject fairly surmise the real nature of the conditions described. Some things, however, will have to remain somewhat obscure without, however, losing their historic value.

The eye in Talmudic language is called "Ayin," meaning "fountain or water well." By external appearance we differentiate the "Laban" white or sclera and the "Shachar" black or the cornea. The pupil is known as "Ishon," meaning "little man." Occasionally the pupil is spoken of as "Bath Ayin," or the "daughter of the eye." Sometimes it is called "Baba;" this term is somewhat similar to the English "baby." The Talmud also uses the word "Galgal" for the pupil, which means "round." Thus the Talmud says that the "Galgal," pupil, in man is round, while in animals it is oval, except in the snake, which also has a round pupil.<sup>12</sup> A congenital oval pupil in man is considered an anomaly of development.<sup>13</sup> By this anomaly we may understand coloboma of the iris. "Galgal," however, is also employed as the equivalent for the eyeball, so that in some legends the word must be translated bulbus and in others pupil. "This world is compared to the 'Galgal' eyeball, the white is the ocean encircling the earth, the black represents the earth, the iris within the black signifies Jerusalem, and the pupil within the iris is the Temple." The proper explanation of this rather beautiful parable is, just as the pupil is essential for the transmission of physical light so is the Temple necessary for the dissemination of spiritual light.<sup>14</sup> "Qumat" is the iris.

The eyeball is placed within the orbit—"Chor." The superciliary ridge which marks the upper boundary of the orbital cavity is known as "Gubbah," while the eye brow is called "Gibben." The eyelids are called "Afapajim." The eye lashes are spoken of as "Risa;" the word "Risa" is often employed to mean both the lid and the lash.

Of the science of embryology very little was known in those days; it is not surprising, therefore, that we only find one reference to the embryology of the eye, and this has more of a philosophic idea than a scientific basis. It is true that some of the Talmudists speak of

embryologic investigations on pregnant woman slaves condemned by Cleopatra to determine the period of sexual differentiation; it is evident, however, that without a microscope the histologic elements could not be studied. In the development of the eye the Talmud speaks of three parts as compared to our three layers of the blastoderm, namely, Father, Mother and God. The father's sperm is white and from it develops the brain, bone, nails and the sclera of the eye; the mother's sperm is rather reddish and from it develops skin, muscle, blood and the black of the eye; God gives the power of understanding, sight, hearing, and thinking.<sup>15</sup>

The physiology of the eye was either not known or not discussed by the Talmudists. It is, however, stated that the eye is greatly influenced by age; visual acuity is reduced as age advances. The eye brows become heavier and more bushy. The Talmudists knew that vision is a psychic element, depending on the brain for interpretation, while the eye only receives the rays of light, and the sclera does not take part in the act of vision.<sup>16</sup> They were of the opinion, however, that some direct connection exists between the heart and the eye.<sup>17</sup> An interesting point of differentiation between man and animals, from a physiologic aspect, is stated in the Midrash, that man is "Meaded," meaning that his eyes are so placed that he can see round about him by means of ocular excursions without having to turn his head, so that while his eyes are directed in a parallel direction he can still see round about him, while the animal has to turn its head.<sup>18</sup> The lids serve for protection to the eyeball, and in the hen the lower lid in closing overlaps the upper.<sup>19</sup>

Considerable attention is given the lacrimal secretion as a physiologic fluid of the ocular appendages. The Talmud speaks of six kinds of tears, three of which are beautiful and useful and three are rather injurious. Tears caused by smoke and in defecating (due to diseases of the rectum), and, above all, tears caused by the loss of a dear child are injurious, while those caused by medications and collyria are "nice." The most beautiful and useful are those caused by laughter.<sup>20</sup> The tears are salty and may often cause pain when they fall on an excoriated skin when they will produce an eczema. When the enemy entered the Holy of Holies they tied the hands of the young men while the salty tears rolling down their cheeks caused a very painful vesicular eczema.<sup>21</sup> The theologic



reason for the salty condition of the tears, which, by the way, is also good physiologic sense, is given in the Midrash, "If the tears were not salty a man when crying after the loss of a dear one would cry until he would become blind, but the salty tears call his attention to the impending danger."<sup>22</sup>

The etiology of various diseases of the eye, as well as of blindness, according to the Talmud, may be divided into two chief classes, namely, constitutional and local. The local causes are traumatic-chemical irritants or poisons. Direct injuries to the eyes with various instruments or injuries to the skull will cause many diseases and may even produce blindness.<sup>23</sup> Poisons from various insects not only destroy the eye, but may even give rise to serious constitutional conditions. Blindness and diseases of the eye may be caused by the corrosive action of the excrements of the swallow when mixed with the salts of Sodom in the preparation of ocular cosmetics. The blood of a young ass rubbed into the scalp as a therapeutic measure against jaundice may cause sore eyes; the blood of a young cock used for headaches was considered very dangerous to the eye, "one drop of it in the eye will cause blindness."<sup>24</sup> Hemorrhoids often give rise to ocular diseases.<sup>25</sup> "Bulimia"—sudden hunger—is mentioned as a cause of severe eye conditions. Bulimia is a disease spoken of as very dangerous to the eye; in fact, it causes temporary blindness, and the return of sight is of good prognostic value.<sup>26</sup> Neglect in the proper care of the hair of the scalp, an unnatural growth of hair so that more than one hair comes from one follicle are considered potent factors in the causation of diseases of the eye.<sup>27</sup>

Carelessness is very often responsible for blindness. Rabbi Jose says: "Three things cause blindness—combing the hair when it is dry, drinking wine when it is dribbling down the barrel, and putting on the shoes while the feet are wet."<sup>28</sup> Of course, this is only given as an expression of carelessness. Certain herbs have been known to cause eye trouble. It is said that the ass of Rabbi Janai while feeding on some grass became suddenly blind—the name of the grass is not given. An interesting story is told of a blind man, accompanied by a seeing man, while on their way to Tiberia, indulged in some herbs in a meadow and, lo, the blind man regained his vision while the well man became blind.<sup>29</sup> Friedman suggests



the possibility of a mydriatic principle to account for the strange effect, the blind man having suffered from a central opacity of the cornea or lens, the dilatation of the pupil enabled him to see through the clear periphery.<sup>30</sup>

The Talmudists have recognized constitutional weakness as a causal factor. "Fear, anger and sorrow will give rise to serious ocular diseases."<sup>31</sup> Weeping is considered a very important factor in the etiology of diseases of the eye and may cause blindness. Rabbi Chaninas' daughter died and he did not weep over her death. "Was a hen carried out of the house?" asked his wife. "Is it not sufficient that my child died? Wouldst thou have me lose my eyesight through weeping?" replied the Rabbi. "Losing children and getting blind go hand in hand."<sup>32</sup> Especially is weeping responsible for loss of eye lashes. "After weeping the eye gets dim," said Samuel. "Up to the age of 40 a man whose eyes became dim through weeping may yet be restored by different remedies; beyond that age there is no remedy for them."<sup>33</sup> There is a very clear reference to glaucoma in this ophthalmic rule enunciated by the learned Samuel. In this connection it is well to point to the fact that the majority of glaucomatous patients in our clinics to-day attribute the origin of their disease to excessive weeping.

Excessive copulation is considered an important factor in the reduction of visual acuity. "The seed of copulation forms . . . the light of his eyes; he who abandons himself to his passion, his eyes grow dim and the cilia of his eyebrows and eye lashes fall out."<sup>34</sup> Smoke is very injurious to the eyes. "Smoke to the eye is like acid to the teeth."<sup>35</sup> Dark habitations cause nystagmus. "The inhabitants of Mechusa, on the Tigris, suffer with nystagmus because they dwell in dark houses; they suffocate without light and bath."<sup>36</sup> Nystagmus is also said to be congenital and caused by the diet of the mother during pregnancy. A pregnant woman eating "Mnuni," a certain kind of small fishes, will give birth to a child with nystagmic eyes.<sup>37</sup> Heredity and maternal impressions both are considered potent factors in the causation of malformations.<sup>38</sup> Contaminated atmosphere and sandy regions are responsible for certain eye diseases. Hillel, the elder, when asked, "Why do the Palmyrians so often suffer with eye diseases?" answered, "Because they live in sandy regions."<sup>39</sup>

Some causes of blindness are of a superstitious character, i. e., caused by demons. Sabriry is the name of the demon causing night blindness. The equivalent term for night blindness is "Sabriry-Delayla," or the demon of the night. His habitation is in the water, his power is especially in the night, and he is apt to cause blindness in people drinking water in the night from a stream without examining it.<sup>40</sup> Later two Sabriries were considered Sabriry Delayla (nyctalopia) and Sabriry Dejamama (hemeralopia).<sup>41</sup> Another kind of blindness is caused by the demon Bath Melech. The habitat of this princess is on the finger tips; unclean hands, therefore, is a cause of eye diseases. The Rabbis teach that the hands that touch the eye without being washed should be cut off. Hirschberg adds to this saying: "Auf meinen reisen habe ich viele hande gesehen die nach Rabbi Hunna abgehauen zu werden verdienten."<sup>42</sup> He who touches his eyes with his hands without washing them three times deprives himself of his eyesight.<sup>43</sup> The general abnormalities and diseases which will exclude men and animals from the Temple are classified in the Talmud in four categories, namely, (1) Kahajutha or "blindness." This includes all conditions that eventually lead to total blindness.

(2) Machsorajatha or "reduction." This includes all conditions that reduce visual acuity, but never result in total blindness.

(3) Mabalbalitha or "confusion." This includes all haziness and conditions giving rise to disturbances in color sensations or that white and black are confused.

(4) Mishnojatha or "double," also "changed." This includes all kinds of disturbances of the external muscles of the eye and deviations of the visual axis, causing double vision, as well as all kinds of malpositions and defective developments.<sup>44</sup>

In considering the pathologic conditions of the eye as noted in the Talmud, one must bear in mind the fact that the Talmud is not a text-book on ophthalmology and treats only of those conditions which in men disqualifying them from the priesthood and in animals from the sacrificial altar. Again, some of the diseases are mentioned for which the Sabbath may be violated because of the danger of the progress of the disease if left without treatment. When we come to consider the pathologic conditions of the eye as referred to in the Mishna and Talmud we must also bear in mind

the fact that the Mishna was compiled about 200 C. E. and the Talmud was compiled about four hundred years after the rise of Christianity, surely not an era of ophthalmic progress, so that intraocular conditions, such as neuritis, chorioiditis, optic atrophy, were only surmised, but never diagnosed; we find no direct reference, therefore, to these conditions, only those accessible to the naked eye being discussed in the Talmud. We shall first mention those conditions of the eye which were considered a blemish—a bodily defect—and, therefore, disqualified both men and animals from the Temple.

Some diseases are spoken of as transitory, others as permanent. A disease that is curable within the limit of a certain time is described as transitory. In some diseases the time limit is 30 days, in others it is 80 days. A disease that will not yield to any treatment within the limited time is considered permanent.

The following lesions are discussed: Dok “veiled,” most probably corresponding to our nebula. Two kinds are recognized—the permanent and the transitory. The transitory is curable within 30 days. Dok reduces the visual acuity, but does not produce blindness. The permanent Dok is of a darker color than the transitory, for which reason the permanent is also called Black Dok.<sup>45</sup> All animals that have a Dok must be examined and treated for 30 days; if no improvement is noticed within this time the condition is considered a blemish.<sup>46</sup>

Teballul or “Mixture.” The white of the eye invading the black.<sup>47</sup> The condition is described as a piece of tissue coming from the “Laban” white part of sclera passing over the “Sira” corneo-scleral junction and over the “Shachar” black or cornea.<sup>48</sup> This is a very clear description of a pterygium.

Jabeleth or “wart.” Two kinds of Jabeleth are given, one containing hair and nails or the hairy and the non-hairy. A Jabeleth may occur in any part of the body, but when occurring in the eye it is considered a blemish. It is evident from the above statement that the condition referred to is a cyst, simple or dermoid.<sup>49</sup>

Chawarwar or “white spots.” Two kinds of Chawarwar are distinguished—the transitory and the permanent. A transitory Chawarwar is curable within 80 days, during which time the eye must be examined three times, as it is the nature of the disease to come



and go.<sup>50</sup> It is fair to assume that some corneal condition is meant by the above description, perhaps of the interstitial variety.

Majim-Hakobia or "steady water" is spoken of as an incurable disease, leading, as does also Chawarwar, to total blindness. The word as translated means steady or permanent water to distinguish it from the transitory variety. A test is described in the Talmud which is based on dietetic principles in causing an absorption of the water. Lacrimation in these cases was considered a good sign, for by that means it was taught that the water would be eliminated.<sup>51</sup> It is questionable whether the real nature of the condition mentioned above is glaucoma or cataract. The ancients, as we know, considered the cause of cataract to be in the fact that some water passed by means of the optic tract or optic nerve into the eyeball settling in front of the lens and thus occluding vision; in fact, the term cataract has its origin in that theory. It is, however, possible to think of glaucoma by linking the word of "Majim Hakobia" or "steady waters" to the Greek hydrophthalmus. It is of interest to know in this connection that once the diagnosis was confirmed the condition was considered incurable, leading to total blindness.

Barkith, meaning "white shining," when a white substance is seen through the black. Cataract is most probably meant by this term. Barkith is curable in the incipient, but is incurable in the advanced stage.<sup>52</sup>

Jarud is another disease causing blindness. As no definition is given under this term, we may understand conditions not demonstrable to the naked eye.<sup>53</sup>

Chaloson Nachash. The two terms mean in reality one thing. It is highly probable that Chaloson was the scientific, while Nachash was the popular term. Rabbi Jochanan tells that "he once met an old wise man who showed him a first-born animal with a Chaloson on its eye, and he remarked this is what the Talmudists call Nachash."<sup>54</sup> The word Chaloson evidently was taken from the Greek word chalazion, and some lesion of the Meibomian gland is to be understood.

Enabatha. A "berry-like excrescence." This is a malignant eye affection leading to fatal issue, especially the black Enabatha.<sup>55</sup> Here we must think of a malignant tumor or the condition known

as malignant pustule. The conditions above mentioned refer to both animals and man.

In addition the following conditions are mentioned that exclude a man from the priesthood:

Gibben or "ablepharia." There may be an absence of one or both eye brows, which in man was considered a blemish.<sup>56</sup>

Timur is a condition in which the eye lashes are absent. Two kinds are mentioned: (a) Absence of lashes while the roots are still present; (b) absence of both lashes and roots.<sup>57</sup>

Sachbenu, meaning "drooping." This is a condition described as lowering of the lids and the hanging down of the cilia. It is spoken of as a disease of the aged. It is said of Rabbi Jochanan, when he became old, his gabinim were hanging down and interfered with his vision, and he asked his disciples, "Lift my eyes that I can see," and his eyes were lifted with a silver Machkalta.<sup>58</sup> The word gabinim here evidently refers to the eyelids, as it is not likely that the eye brows should assume such proportion as to interfere with vision, especially when they could be trimmed. Here evidently we deal with a ptosis, a drooping of the lid, which could only be relieved by elevating the lids. The Machkalta was evidently a ptosis instrument.

Lacrimation was considered a disease entity. Three degrees are mentioned: (a) "Domoth" or lacrimation; (b) "Tordoth" or epiphora; (c) "Dolphoth," evidently chronic blennorrhoea.<sup>59</sup> The lacrimal passage was evidently known to the Talmudists, as constitutional poisoning by local application of drugs is discussed by them, and some Talmudists state that the drug, going down the nose into the throat, is eliminated by that channel.<sup>60</sup>

To the fourth classification, "Mishnojatha," the following conditions belong:

(a) Microphthalmus. There is no special term for this condition. The Talmud simply describes the condition by saying "when both eyes are as small as a goose eye."<sup>61</sup>

(b) Macrophthalmus, when the eyes are as big as calf eyes, a somewhat similar term to bupthalmus.<sup>62</sup>

(c) "Zugdum." Under this term we include all kinds of unequal eyes—one eye large, the other small; one pupil large, the other small; one brow white, the other black.<sup>63</sup>

(d) "Luphin" is described as a form of symblepharon.<sup>64</sup>

(e) "Nud," nystagmus, a constant movement of the eyeball, which, according to the Talmud, may be either congenital or acquired.<sup>65</sup>

The following conditions are also mentioned without giving any special term:

(a) When both eyes are placed too high, kataphoria.

(b) When both eyes being placed too low, antropia.

(c) One eye being higher than the other, hypertropia.

(d) One eye turned down, the other turned up.

Strabismus is expressed in the following manner, "when one speaks to a man while one of his eyes is directed to another." Another way of expressing it, "when a man can see the house and the cellar at the same time."<sup>66</sup> They evidently were of the opinion that in cases of squint both eyes see the object toward which the visual axis is directed.

Of the active inflammatory conditions of the eye, only those are mentioned for which the Sabbath may and should be violated. This law was made by Samuel as a result of an accident in his family. The maid of Samuel suffered from an acute inflammatory condition of the eye on a Sabbath day. She asked for treatment, but none was given her, so her eye bursted. The next day Samuel declared that all acute inflammations of the eye should be treated on a Sabbath day.<sup>67</sup> The accident above mentioned was most probably an acute ulcerative condition of the cornea, which perforated. The following acute inflammatory conditions are mentioned for which the Sabbath should be violated:

(a) Rira, meaning "pus" or suppuration, including all acute suppurative conditions.<sup>68</sup>

(b) Dica, meaning "sticking pain," including all conditions with sharp pain.<sup>69</sup>

(c) Dama, "blood," includes all hemorrhagic conditions.<sup>70</sup>

(d) Gideha, "burning." This includes, of course, all inflammatory conditions.<sup>71</sup>

While at present these conditions are considered only as symptoms, they were thought by the Talmudists to be disease entities.

Sachi-Shemesh, or "sun hatred" (photophobia) is also mentioned as a disease condition.<sup>72</sup>



Trutoth, a condition translated to mean granular conjunctivitis, and common among the Palmyrians.<sup>73</sup>

Ophthalmia neonatorum is not mentioned directly, but we find a law to the fact that a child suffering with eye disease should not be circumcised on the eighth day, but the performance of the rite should be postponed until the child has completely recovered.<sup>74</sup> The soundness of this hygienic measure is, indeed, highly commendable. Most cases of ophthalmia in the new born are of gonorrheal origin and any operative procedure would be dangerous.

Sabiriy Delayla, or night blindness, and Sabiriy Dejamama, or day blindness, are both mentioned as diseases caused by some demons. It is highly possible that the origin of the demon theory developed on account of the negative external lesion to account for the symptom. An ophthalmoscopic examination in those cases might have revealed a pigmentary degeneration of the retina and drive the demon out of fashion. Of course, there are no explanations given on these various pathologic conditions, as the reference to them in the Talmud is not from a medical point of view. There are references to ectropion, entropion, blepharitis, conditions ascribed to excessive weeping and which were considered as a blemish in a priest, as the priest was supposed to have been an attractive man.

#### THE THERAPEUTICS OF THE TALMUD.

In considering the therapeutics of the Talmud it is well to state that there were among the Hebrews of ancient times two kinds of practitioners, namely, the scientific physician and the charmer. The latter were mostly women. Of course, the title "Rophe," or physician, implies the rational healer whose advice in Talmudic literature is considered authentic. The specialist is called "Mumcha" or "Rophe-Mumcha." In some instances their therapy was peculiar. For example, for a bite of a rabid dog the profession used the extract of the liver of the dog as an antidote to rabies. In a discussion as to whether a man bitten by a rabid dog on the Day of Atonement is permitted to partake of the extract, some Talmudists on the negative side say: "It is true that the profession is employing the extract, but it has not been proven to have a positive preventive effect."<sup>75</sup>

The charmers were tolerated, but were not permitted to practice

on a Sabbath day, a privilege granted to the regular physicians. The physician had to have a license from the city council.<sup>76</sup>

The treatment of diseases of the eye as found indirectly discussed in the Talmud is of two kinds—those employed by the profession and those used by the charmers and the general popular practice. The medical therapeutics may be divided into hygienic and curative.

#### OCULAR HYGIENE.

The hygienic rules for the preservation of sight and prevention of diseases of the eye found scattered in the Talmud and collected by Maimonides are sufficient evidence of the advanced standing of the ancient Hebrews in the knowledge of preventive medicine. To preserve the sense of sight, one should guard against the following: Not to go from a dark to a very light room or place, or the opposite, for the change from dark to light, or *vice versa*, is very injurious to the visual nerve. Therefore, the eye should gradually become accustomed to the change. Light reflected by the sun is also injurious to the visual apparatus, i. e., the light radiating from a place on which the sun shines affects the eye sight. One should be careful not to strain his eyes in the dimness of twilight, in the sunshine of midday or at night by a candle light, and should not look steadily at white or bright red color nor at a fire. Smoke and sulphurous odors are injurious to the eye, so is also excessive walking, a rapid gait and copious weeping, and it is well to guard against them.

Excessive copulation injures the eye more than anything else. "The seed of copulation forms the strength of the body, the life of the man and the light of his eyes. Consequently excessive seminal emission will cause the body to waste away by sapping its strength and destroying its vitality." King Solomon, in his wisdom, has also inculcated this principle in the admonition, "Give not thy strength to women."<sup>77</sup> He who abandons himself to his passion for copulation grows aged before his time, his strength abandons him, his eyes grow dim, an offensive odor emanates from his mouth and is exuded from his arm pits. It also causes the loss of hair of the head, as well as of the eye brows and eye lashes, and is productive of an abnormal growth of hair on the face, also on the extremities of the body. It also causes the falling out of the teeth and subjects him to many other diseases. It was asserted by the most eminent

physicians that one of a thousand succumb to other diseases, the balance being the victims of excessive copulation. It, therefore, behooves him who has a regard for his welfare to exercise the most care in this matter.<sup>78</sup>

Clean hands are important in the prevention of ocular diseases. Rabbi Nahum used to say the eye is like a princess, and it hurts to be touched by hands that have not been washed three times.<sup>79</sup> Washing the hands three times in the morning is a hygienic rule of the Jewish religion. Rabbi Muna used to say as soon as a man rises and his hand touches his eye without being washed it had better be cut off. The same should be done with the hand that touches a pitcher of beer before it had been washed, because such a hand causes blindness.<sup>80</sup> It is also essential that one should wash his hands after meals as a precaution against diseases of the eye,<sup>81</sup> for the salt of Sodom used is very injurious to the eye and may even cause blindness. Rest is an important element in the treatment of inflammatory conditions of the eye. Talking is forbidden during the inflammatory stage, and no visitors are allowed to disturb the patient.<sup>82</sup>

#### THERAPEUTICS.

Some dietetic rules are discussed in the Talmud which have considerable value from a hygienic standpoint in the treatment of various diseases of the eye. Pregnant women were forbidden certain foods because of the injurious influence on the child's eye. Dietetics are crudely spoken of in the Talmud: Thardin or Mangold was considered healthy, provided it was well cooked. Figs have a good influence on the eyes. Asparagus is good for the heart and for the eyes.<sup>83</sup> Honey, when taken after meals, has a very good effect on the eyes, but is injurious when taken before meals.<sup>84</sup> White bread, fat meat and old wine increase the visual acuity, while rye bread, fresh beer and raw cabbage are injurious and reduce  $1/500$  of the visual acuity.<sup>85</sup> Goose lung was considered of special dietetic and therapeutic value, so much so that the price of the lung was three times that of the goose. According to Rabbi Jose, the lung was dried and medicated, but very few knew how to prepare it.<sup>86</sup> A certain kind of fish is injurious in the early stages of acute inflammatory conditions, but fish in general is very useful in the convalescing stage.<sup>87</sup> The Babylonian "Kutach" was considered very



dangerous to the eye. This was a preserve made of sour milk bread crusts and the salt of Sodom. The danger was in the salt, as it was able to produce blindness.<sup>88</sup>

Active treatment consisted of local applications and internal medication. For external application fluids, salves and pastes were used. The therapeutic value of a few herbs are discussed, but only indirectly. Kusbartha or Oleander is spoken of as a very useful remedy in ophthalmic therapy. In discussing the value of this drug, some Talmudists declare it not only not useful, but claim that it reduces the visual acuity. "Even I who am gifted with good eyes am affected by the use of this drug," says Rabbi Huni.<sup>89</sup> Oleander produces this effect when used both locally or taken internally. The Tosephta, however, explains that while it is true that it reduces vision it has a soothing and curative influence on all inflammatory conditions.<sup>90</sup> The reduction in visual acuity resulting from the employment of the drug is due to its mydriatic principle.

Another much employed drug is "Gargira", or *Eruca Sativa*, which is said to increase the acuity of vision. "I have always been benefited by its use," says the blind Rabbi Sheshes.<sup>91</sup>

Samuel was considered the best ophthalmologist. He says, "All eye lotions that have a curative effect also reduce visual acuity, except water, which cures without any untoward symptoms."<sup>92</sup> The eye lotion or "Cholron" of Samuel was widely known and generally employed. His reputation extended beyond the boundaries of his land. Samuel himself, however, considered cold water as an eye wash and daily bathing of the hand and feet of more value than all the collyria. Rabbi Yanai of Babylon sent a request to Mar Ukba of Palestine: "Let Master send me the eye lotion prescribed by Samuel for inflamed eyes." Mar Ukba answered: "I send to you the cholron of Samuel that you do not think me parsimonious, but Samuel said that 'bathing the eye in cold water in the morning and bathing hands and feet in warm water in the evening' is better than all collyria in the world."<sup>93</sup> Wine was considered an important remedy, especially wine-soaked bread, and used as a local compress.<sup>94</sup>

Sputum was extensively used by the populace. The Egyptians used sputum in many diseases of the eye. The Hebrews considered the sputum of a man who did not break his fast and the sputum of a

great man or of a first born of special value. The saliva of a temperance man, however, was considered best.<sup>95</sup> The therapeutic value of saliva is mentioned in the New Testament.<sup>96</sup> It is to be regretted that sputum is still largely used by the ignorant in many countries. Puch is mentioned as a very popular ointment and was extensively used, especially in cases of excessive lachrimation and chronic blepharitis with marked loss of the cilia. Its physiologic action is to dry the secretion and it also stimulates the growth of hair.<sup>97</sup> The constituents of this ointment are not given. Kechol is another important eye lotion in the treatment of various diseases.<sup>98</sup> Rabbi Nachman says: "Kechol brightens the eye and is only useful up to the age of 40. After that age, however, it may preserve the eye, but has no special curative effect."<sup>99</sup>

Cataract in the advanced is incurable, but is curable in the incipient stage. The following treatment is given for the incipient stage: The skin of a scorpion having seven different colors is dried and powdered. Mix one part of this powder with three parts of Kechol and instill three drops of the mixture in the eye. Care must be taken, however, not to instill more, as the eye may burst.<sup>100</sup> Sama was a drug not very frequently used on account of its poisonous effect. It had a very penetrating odor. It is told by Samuel, who was the physician to Rab, that once Rab's eyes were inflamed, and Samuel suggested the instillation of Sama. "Let me apply it externally," but Rab refused. So Samuel placed the drug under his pillow and he got better.<sup>100</sup> Mother's milk, the white of an egg and the blood of various animals were much employed in the treatment of ocular diseases.

I found no record of any surgical procedure as a therapeutic measure in the Talmud, i. e., ophthalmic surgery. I have, however, noticed references to enucleation and to artificial eye-balls.<sup>101</sup> Incantation and charms were used by the people in many disease conditions. In night and day blindness it was very popular. Some of the Talmudists have forbidden this practice, others have permitted it.<sup>102</sup> The exact nature of the various drugs mentioned in the Talmud is not familiar to us, nor have we any true conception of the constituents of the preparations. No mention is made in the Talmud about far or nearsightedness, weak eyes included, all possible errors of refraction. Some points of considerable interest

may be found in the Talmud on the medico-legal aspect of ophthalmology to which, however, I shall devote my time and attention in a subsequent paper.

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